MarketPulse Egypt

Medicinal and Aromatic Herbs

International General Market Considerations and Product Forms

Common Medicinal and Aromatic Herbs
General international market considerations and product forms

Product definition

No standard definition exists for herbs, and the distinction between herbs and spices is often imprecise. For the American Spice Trade Association (ASTA), the term "spices" also covers herbs and aromatic seeds. In traditional Western usage, the term "herbs" denotes plants grown mainly in temperate and Mediterranean climates, whose leaves, stems and flowering tops are used, fresh or dried, chiefly for food seasoning.

This survey covers the 12 best known and most widely traded herbs employed mainly for culinary purposes, namely: parsley, mint, sage, thyme, bay, marjoram, rosemary, basil, oregano, dill, savory and tarragon. They are classified under the following headings of the Standard International Trade Classification, Revision 3 (SITC), and the Harmonized Commodity Description and Coding System or Harmonized System (HS):

SITC, Rev3	*HS or CCCN*	*Heading*
054.59	0709.90	Other vegetables, fresh or chilled. (Covers, among many other items, parsley, chervil, tarragon, savory, dill and sweet marjoram(Majorana hortensis or Origanum majorana).)
056.19	0712.90	Other vegetables and mixtures of vegetables, whole, cut, sliced, broken or in powder, but not further prepared. (Among others, covers parsley and chervil.)
075.28		Thyme, saffron and bay leaves
	0910.40	Thyme; bay leaves
292.49	1211.90	Other plants and part of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered. (Covers, among other items, leaves and flowers of basil (Ocimum basilicum), wild marjoram (Origanum vulgare), mint (all species); herbs, flowers and leaves of rosemary (Rosmarinus officinalis), and leaves and flowers of sage (Salvia officinalis).)

Product forms and major end-uses

1. Product forms

Culinary herbs are traded intentionally largely as **dried** herbs. Both the wild and cultivated varieties are traded mostly in the "crude", " un-manufactured" or "not ground" forms, which means that they have been cleaned but not further

processed.

Further processing beyond the drying stage is most often undertaken in the consuming country. This involves grinding, chopping or crushing, or further cleaning and packaging of whole leaves, stems or flower-heads.

All major spice/flavor companies market various mixtures or combinations of herbs, mainly for the retail or household market. An example is the "bouquet garni", which consists of small amounts of thyme, rosemary and bay leaves – either blended and packed in a muslin bag or tied in a bunch which can be removed after cooking. "Fine herbs" are usually a combination of tarragon, chervil, parsley and chives which are mixed and/or cooked with food and are eaten. "Mixed herbs" are generally made up of marjoram, thyme, parsley and sage.

The international trade in intensively cultivated herbs, dehydrated with the aid of new technologies, is tending to rise. Likewise, the wholesale market for organic herbs is expanding, particularly in Germany and Switzerland, although their price premium seldom exceeds **25%.**

Large quantities of **fresh herbs** are traded within the producing countries. In France, for example, demand for fresh herbs is thought to exceed domestic supplies. The major market outlets are restaurants and supermarket chains, and the leading sales items are the bouquet garni and fresh mint. The latter is sold mostly to North Africans living in France.

To meet demand for fresh herbs, European growers have turned to expensive investments in heated greenhouses or to the use of plastic tunnels for early-spring and late-fall growth. In the winter, imports are obtained from warmer areas such as Israel.

The structure of the trade in fresh herbs is much closer to the trade in fresh vegetables than to the trade in dry herbs. Commercialization is generally handled through the major wholesale markets. These are located in Rungis (south of Paris) and in Hamburg, Germany.

The intentional trade in fresh herbs is limited and offers little prospect for substantial penetration by a new producing country. It is for this reason that fresh herbs are not discussed further in this survey.

Frozen herbs have developed a market as replacements for the dried products and as a complement to fresh herbs. Consumers perceive less wastage from frozen products (which are offered in packages from which small quantities can be taken for use at any time) than from fresh herbs (which are generally sold in

quantities larger than that required in recipes). Although it remains small, the market for frozen herbs is growing rapidly in France; it is also expanding in Germany, the Netherlands and the United Kingdom.

Herb oleoresins, obtained from herbs by steam distillation and by solvent or CO_2 extraction of essential oils, offer certain advantages over the natural ground herbs from which they are derived. These advantages include higher potency and greater uniformity of the product; quality consistency; convenience in use when dispersed on a neutral carrier such as salt, dextrose or sucrose; freedom from micro-organisms; more uniform dispersion of the flavor of the product; and easier and cheaper handling and storage.

Several companies in the countries reviewed, particularly in the baking and processed meat industries, prefer dispersed oleoresins to dried herbs. However, with the exception of oleoresins from sage and celery seed, herb oleoresins are not widely used. For the time being, dried herbs do not face strong competition from their oleoresin substitutes.

The growth of usage of herb oleoresins will depend on regulations, which have a major impact on the markets for herbs and essential oils. The use of "natural aromas" is a strong selling argument with European food consumers. However, the legislation governing the term currently differs from country to country within the European Economic Community (EU). In Italy, but not in France, for example, aromatic substances obtained through chemical synthesis that have the same chemical structure as the chemicals in the natural plants can be marketed as natural aromas. Legislation harmonizing food manufacture and other agricultural regulations by 1993 in EU will have an impact on the production and use of herbs and herb oleoresins.

2. Major end-uses

The culinary herbs discussed in this survey are used mainly to flavor, season and garnish food. These herbs are marketed individually or in mixtures. They are also used in the manufacture of:

1. Seasonings, which are blends of herbs and spices. In most cases, their names suggest their principal use (e.g. seasonings for barbecue, chicken salad or steak).

2. Among the new products are a wide variety of blends for use in microwave cooking, as dips and for ethnic cooking; a new range of condiments such as herb pepper, dill pepper (from McCormick-Schwartz in the United Kingdom); and herbs formulated for consumers who want to reduce their intake of salt, calories or cholesterol (dietetic preparations).

3. Stuffing mixes (for example, herbs and breadcrumbs) for use mainly to stuff meat or to be cooked on their own to accompany meals.
4. Sage (and onion) mixtures dominate the stuffing mix market, with other products such as parsley and thyme or apple and herb stuffings taking a small share.

5. Demand for culinary herbs comes from three sectors:

6. The food manufacturing sector, the meat industry in particular. This sector has increased its usage of herbs, often replacing certain dried herbs with alternative products such as the corresponding essential oils and oleoresins.

7. The institutional, or food service, sector. The rapid growth of this sector has contributed to the increase in the consumption of fresh and dried herbs, seasonings and stuffings.

8. The retail or household sector, which remains the largest user of dried herbs.

The relative sizes of these sectors vary widely from country to country, as do the range of herbs employed and the forms in which they are used.

Estimates of the breakdown of sales of dried herbs by major sector are difficult to obtain, but discussions with traders and packers suggest the following end-use patterns in the countries reviewed:

	Percentage of total sales		
	Retail trade	Food Industry	Institutional caterers
France	55	25	20
Germany	50	30	20
Netherlands	35	55	10
United Kingdom	40	40	20

Tastes are obviously the important factor in consumption. However, tradition and local availability of given herbs are not enough to explain the preference of certain countries for particular aromas and flavors.

Herbs are also widely used for their medicinal properties. The pharmaceutical industry uses large quantities of herbs in medicinal preparations. In addition to dried herbs primarily used as teas, other galenic forms have developed. These include plant powders in capsules, dry extracts, medicinal beverages, phytotherapeutical formulations and extracts used in aromatherapy. The

development of herbal medicines in Western Europe will depend on legislation, as the sale of these products as a remedy in a pharmacy requires a license supported by extremely costly clinical and toxicological research. The products are also subject to a quality approval system, which encourages only items of the highest quality.

Herbs such as rosemary and mint are also used in perfumery and in cosmetic products and preparations. Some culinary herbs are utilized in very small quantities for other purposes, such as for decoration, dyeing and fabric cleaning, as insect deterrents, and as masking agents for certain food and pharmaceutical products with undesirable odors and flavors.

Some common herbs in the international trade:

Basil, sweet

Ocimum basilicum

Labiatae family

Language and mythology

Basil originated in India, where it was regarded as a sacred herb. The name comes from the Greek basileus meaning 'king.' Once people were no longer fearful of this herb, it was said to be "fit for a king's house." In Haiti basil is thought to belong to the pagan love goddess Erzulie, and in Italy it has been regarded as a sign of love.

Description

The plant has leafy stems and thin, branching roots. The two-lipped white flowers are 1/2 inch long and grow in racemes at the top of stems. The leaves are 2 to 3 inches long, opposite, and ovate with entire margins. They are yellow-green to dark green, depending on soil fertility. The tiny seeds are dark brown.

Plant type and hardiness

Annual; hardiness zones are not applicable to annuals.

Height and width

Height 12 to 24 inches; width 12 inches.

Light and soil

Full sun; rich, moist, well-drained soil with a pH of 6.

Pests and disease

Japanese beetles.

Cultivation

Basil must have warm conditions. For best results, sow in late spring or early summer. It is susceptible to cold and frost, and to drastic temperature change. Pinch the centers as the plants grow to ensure bushiness. Basil can be grown in pots but does not survive indoors.

Companion planting

Basil attracts butterflies and insects to the garden. It stimulates the growth of companion plants, especially tomatoes and peppers. It is said to repel white flies. Basil and rue do not do well when grown near each other.

Propagation method

Seeds, cuttings, or transplants.

Bloom time and color

July to August; white.

Harvesting

Harvest in early Autumn before the cold weather arrives and the leaves turn limp and yellow. Cut the long, leafy stalks for drying just before the plant comes into flower. Spread them in a shady place or on wire mesh to encourage quick drying. Do not hang in bunches as the leaves will dry too slowly and can mold. Oven drying is not advised, as the leaves scorch. Basil can be frozen chopped fresh in ice cube trays.

Herbal uses

Aromatic, cosmetic, culinary, and medicinal. Dried basil is used for its fragrance in potpourris and sachets. It also is used in herbal bath mixtures and to add luster to the hair. Fresh or dried basil is used in cooking to flavor Italian, Mediterranean, and Thai dishes. Fresh leaves are used in tomato and pesto sauces. Basil is good with veal, lamb, fish, poultry, white beans, pasta, rice, tomatoes, cheese, and eggs. It also is used in vinegar and for tea. Basil is said to have some medicinal qualities.

Two main varieties of basil are traded: sweet or common basil *(Ocimum basilicum* L.) and bush basil *(O. **minimurn).*** Because of its larger leaves and richer fragrance, sweet basil is commonly used as a culinary herb, while bush basil is employed mainly for decorative purposes and as an insect repellent.

Basil is used extensively in French, Greek and Italian cooking. It is utilized especially in tomato-based recipes; to season pizzas; for flavoring stews, sauces, sausages, salads, vinegar, mustard and pickled vegetables; with scrambled eggs; with cheese and in bouquets garnis

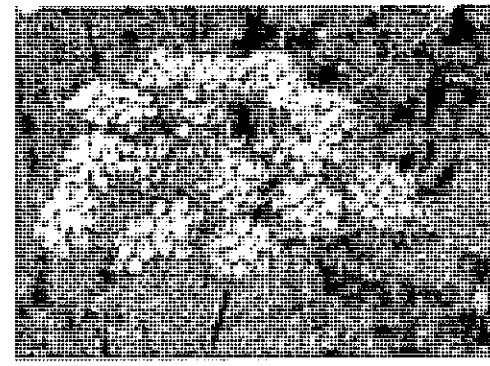
The herb is also used in snuff manufacture, for medicinal purposes, and in the production of a variety of essential oils used in the formulation of compounded fragrances and for flavoring sauces, condiments, vinegars, canned meats and baking products.

Very small quantities of basil are used as a tincture **(20%** in **60%** ethanol), as a flavour modifier and in the manufacture of liqueurs (chartreuse, in particular).

Garden notes

We planted basil in large massings near smaller groupings of summer savory. The basil flower buds were pinched off during most of the summer to prolong the life of the plants by delaying flowering. This made the plants very bushy and full. We let the basil flower just before the summer savory so that both bloomed at the same time. This produced a nice effect. Our basil attracted Japanese beetles for about three weeks early in the summer. To keep the plants looking nice, we pinched off new growth as it was damaged by the insects.

Anise
Pimpinella anisum
Umbelliferae family



Language and mythology

Anise is native to the Middle East. Although its name does not have a particular meaning, the plant itself is associated with health and is thought to aid digestion. It has been cultivated for much of recorded history. Hippocrates recommended it for coughs, and the Roman scholar Pliny used it as a breath freshener. Today's spicy wedding cake may have originated from a cake containing anise that was eaten by the Romans after large feasts.

Description

This herb has a woody root that produces a round, grooved, branched stem. The coarse-toothed lower leaves are round to cordate with long petioles. The upper leaves are feathery, delicate, and pinnately divided. Leaflets may be toothed or toothless. The small flowers are white to yellowish white with petals that are held in compound umbels. The brown fruit is ovate, downy, flattened, and 1/8 inch long.

Plant type and hardiness

Annual; hardiness zones are not applicable to annuals.

Height and width

Height 18 to 24 inches; width about 12 inches. Light and soil Full sun; light, dry, well-drained soil with a pH of 6.

Pests and diseases: None noted.

Cultivation:

This spindly plant needs protection from winds and plenty of sunshine to promote healthy growth. Its fragile, tender seedlings do not transplant well. Add fertilizer only if the soil is extremely poor, and add lime if the pH is very acidic. Water regularly in hot,

dry weather, preferably in late afternoon or evening to avoid scorching the plant.

Companion planting:

Anise seed will germinate more rapidly if sown near coriander. It has been shown that the presence of coriander improves the actual seed formation of the anise plant.

Propagation method:

Seeds sown directly into the ground. Bloom- time and color July to August; white to yellowish white.

Harvesting:

After the flower umbels have become heavy with ripe brown seeds, cut the heads off before they drop. Place them in a single layer on a paper towel or plate in a dry place. If possible, expose to direct sunlight to allow the seeds to completely dry out. When the seeds are crisp and dry, rub between palms to separate the seed from the hull, sieve to remove seeds from the husks, and store in airtight containers.

Herbal uses

Aromatic, culinary, and medicinal. Anise may be used for its aromatic qualities in oil and potpourris. Crushed seeds are added to sachets. The licorice flavor complements eggs, fruit, cheese, pastries, cakes, and cookies. The leaves are used in salads or as a garnish and dried for teas. The seed is used whole or ground. Anise is reported to have some medicinal qualities.

Garden notes

Seeds germinate readily in flats, but anise transplants poorly.

Caraway

Carum carvi

Umbelliferae family

Language and mythology:

Caraway is indigenous to all parts of Europe and may be native to parts of Asia, India, and North Africa. Its properties were recognized by the ancient Egyptians and early Greek and Romans. Popular in the Middle Ages and in Shakespeare's day, it was said to prevent lovers from straying and was a favorite ingredient in love potions. Caraway seed cake is a tradition in England.

Description:

The plant has hollow, furrowed, branche stems and a long tap root. The small white or yellow flowers have compound umbels with rays of equal length. The finely cut, bi- or trip innate leaves are about 6 to 10 inches long. The upper leaves are on a sheath

like petiole. The dark brown fruit is oblong and flattened with two seeds each and five pale ridges.

Plant type and hardiness: Biennial; hardiness zones 3 to 4.

Height and width: Height 24 to 36 inches; width 8 inches.

Light and soil: Full sun to light shade; light, dry soil with a pH of 6.4.

Pests and disease: None noted.

Cultivation:

Sow seeds in spring or in autumn if the climate is mild. Plant in a sunny, sheltered site in shallow drills about 8 inches apart. When the seedlings are 3 inches high, thin to 6 inches apart. Seedlings do not transplant well.

Companion planting:

Caraway and fennel hinder each other's growth and should not be planted together. Caraway improves heavy soils by loosening the soil.

Propagation method: Seeds or cuttings.

Bloom time and color: May to June; white or yellow.

Harvesting: Harvest the grayish brown seeds when they are mature, about one month after flowering, Dry them on paper towel or plates in a shady area. Expose seeds to the sun, allowing them to completely dry out. Store in an airtight container when the seeds fall from the shriveled flower heads. Sieve to remove any unwanted pieces of plant. The roots should be harvested when young for culinary use.

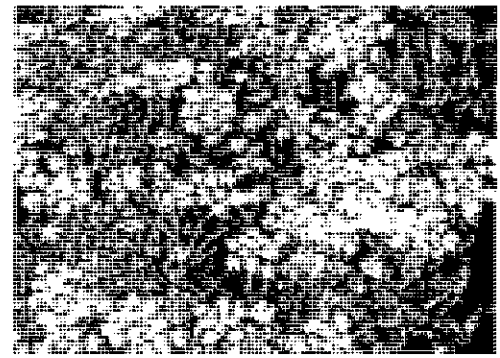
Herbal uses: Culinary and medicinal. The seeds are used to flavor breads, cakes, biscuits, boiled or baked onions, potato dishes, baked fruit, cream cheese, soups, and stews. They also may be sprinkled into the pot when steaming turnips, beet roots, parsnips, carrots, cabbage, cauliflower. The leaves are used in salads soup and stews and with spinach and zucchini. The roots can be boiled and eaten like parsnips with melted butter or white sauce. The plant can be grown indoors in a sunny place. Caraway is said to have some medicinal qualities.

Garden notes Since our plants were set out very late in the season, they did not reach maturity or bloom. We did notice, however, that these were the first plants that the rabbit ate. They were sheered off completely, whereas most other plants were untouched or only slightly eaten by our little friend.

Coriander

Coriandrum sativum

Umbelliferae family



Language and mythology

Coriander was named after the bedbug emitting the same odor, and commonly named cilantro. It originated in southern Europe and reached other areas centuries ago, including the hanging gardens of Babylon. Ancient Sanskrit texts, Egyptian papyrus records, and the Bible all mention coriander. The Chinese believed it imparted immortality, and it was used in love potions in the Middle Ages.

Description

This bright green plant has thin, erect, finely grooved stems and compound, pinnate leaves. The lower leaves are rounded and lobed, while the upper ones are finely dissected. The tiny white to reddish flowers have compound umbels with three to ten rays. The outer flowers are larger than the inner ones. The fruit consists of brownish, globose seeds 1/4 inch long in clusters. The seeds have a musty odor.

Plant type and hardiness

Hardy annual; hardiness zones are not applicable to annuals.

Height and width

Height 12 to 36 inches; width about 6 to 8 inches.

Light and soil

Full sun to partial shade; fairly rich, light, well-drained soil with a pH of 6.6.

Pests and disease

None noted.

Cultivation

Protect the young plants from prevailing winds by planting seeds in a sunny, sheltered location. Work the soil until fine and crumbly, adding a little lime if the soil is too acidic. Sow the seeds in April or May in 1/2-inch-deep drills. Cover, pack the soil down, and keep it moist until seedlings appear. In hot, dry weather, water regularly in late afternoon or evening. As the plants grow, they may need to be staked or supported.

Companion planting

Grown near anise, coriander helps the seeds germinate, but grown near fennel, it hinders germination. It grows well with chervil. Honey bees are attracted to the flowers.

Propagation method

Seeds (remain viable for five to seven years).

Bloom time and color

June to August; white to reddish.

Harvesting

Pick fresh leaves any time during the growing season. Dry leaves in a warm, airy place, crumble, and store in airtight Containers. Cover fresh leaves with water and freeze in ice cube trays or wrap leaves in foil and freeze for use within a few weeks.

Herbal uses

Aromatic, culinary, decorative, and Medicinal. Ripe seeds have a pleasant citrus scent and can be used in potpourris. The leaves, seeds, and roots are used in cooking salsas and curries or as a garnish. Coriander combines well with onion, sausage, clams, oysters, and potatoes. Whole ground seeds are used in salad dressing, cheese, eggs, chili sauces, and guacamole. The plant

can be grown in containers as an ornamental. It is said to have some medicinal qualities.

Garden notes

These plants added a strong fragrance to our garden. Their delicate white blooms, although small, were quite numerous and produced a lovely effect against a varied background of borage and bee balm.

Marjoram, sweet

Origanum marjorana

Labiatae family

Language and mythology

In ancient Egypt, marjoram was used in healing, disinfecting, and preserving. Aphrodite, the goddess of love, was said to treasure this herb. The Greeks called this plant "joy of the mountain" and used it to make wreaths and garlands for weddings and funerals. During the Middle Ages, European ladies used marjoram in nosegays.

Description

Marjoram is similar to oregano, but it has a finer texture. This tender perennial has a dense, shallow root system and is grown as an annual. The square, branched stem has gray hairs. The tiny white, pink, andred flowers are knotlike and shaped before blooming in spherical clusters on spikes or corymbs. The pale green leaves have gray down. They are opposite, elliptical, entire, and 1¼ to 1 inch long. The seed is a tiny light brown nutlet.

Plant type and hardiness

Tender perennial; hardiness zones 9 to 10.

Height and width

Height 10 to 12 inches; width 10 inches.

Light and soil

Full sun; well-drained, rich soil with a pH of 6.9.

Pests and disease

None noted.

Cultivation

Take cuttings of new shoots (about 3 inches long) in late spring when the leaves are firm and will not wilt when placed in sand. Plant well-rooted cuttings in the ground about 12 inches apart or plant in pots outdoors. If seeds are used, sow in a seed-box in spring; then plant outside when the plants are 3 inches tall. Cut out old wood that becomes leggy at the end of winter, and replace plants every four years or so to prevent legginess.

Companion planting

Marjoram attracts honey bees and helps the garden. When grown near stinging nettle, marjoram's essential oil is said to become stronger.

Propagation method

Seeds.

Bloom time and color

July to September; white, pink, and red.

Harvesting

In late summer to early autumn, harvest plants at the peak of bloom or just before they are in full flower. Cut the stems with flower heads attached and dry on screens or hang in a cool, airy place and catch leaves that fall. Strip leaves and flowers after they are crispy and dry. Store in airtight containers. Fresh marjoram also can be frozen in ice cube trays or in foil for up to two weeks.

Herbal uses

Aromatic, cosmetic, decorative, and medicinal. Aromatic qualities led to its historical use as a strewing herb. It has mild antiseptic properties and is added to herb bath mixtures. The leaves and flowers are used fresh or dried in cooking many foods, including beef, veal, lamb, poultry, fish, green vegetables, carrots, cauliflower, eggs, mushrooms, and tomatoes. It flavors stews, marinades, sautes, dressing, vinegars, butter, and oils. The plant can be grown in containers. Dried marjoram can be added to herb wreaths, especially culinary wreaths. It also is used to make olive green dye. It is said to have some medicinal qualities.

Also known as sweet marjoram, *Majorana hortensis* is a perennial herb of the mint family widely used in European cooking. It gives a sweet and pungent flavor with slightly bitter undertones to all meats, poultry, seafood and baked or grilled fish. It is a useful addition to vegetable soups; sauces; stews; mince; egg dishes; salami, liverwurst, bologna and other sausages; and chicken and turkey stuffings. Fresh marjoram is also used as a seasoning for salads. The dried herb faces competition from the oleoresin in the production of liverwurst, bologna and cheese.

The essential oil is also employed to formulate compounded oils for flavouring sauces, condiments, canned meats and other food products.

The plant has some medicinal uses. Both the dried herb and a tincture are also used in the manufacture of vermouth and bitters.

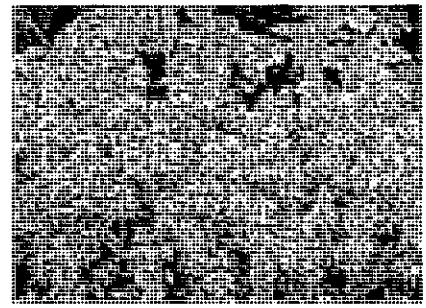
Garden notes

For a more dramatic effect, we grew these low plants massed along the garden border. We pinched them back several times to encourage bushier growth.

Mint

Mentha suaveolens

Lamiaceae family



Language and mythology

Peppermint *(Mentha piperata)* and spearmint (*Mentha spicata)* are commercially cultivated; mint is probably the world's most important flavor after vanilla and citrus. The essential oils extracted from the various members of the genus *Mentha* (family Labiatae) satisfy the largest part of world demand for mint flavoring. However, mint leaves remain among the world's most important herbs. The variegated varieties are sometimes known as Pineapple mint .Mint is considered a sign of hospitality.

Description

Leaves are pubescent to tomentose and have a sweet scent.Leaves are also sessile and oblong to nearly ovate. Leaf margins are serrate.

Plant type and hardiness

Hardy herbaceous perenial; hardiness zone 5-9.

Height and width

Height 2 feet; width varies, spreads aggressively.

Light and soil

Full sun to partial shade; rich, moist well drained soil with a pH of 6.0-7.0

Pests and disease

Spider mites, looper, flea beetle, root borers, grasshopper, cutworm, root weevils, and aphids; verticillium wilt, mint rust and mint anthracnose.

Cultivation

Can be sown from seed in flats or in the ground directly. Can be successfully propagated by cuttings: place cuttings in medium, keep moist, and transplant once the root system is well established. All mint can spread rather quickly by runners. Either contain it in pots that are buried or give it a large area it may take over. Frequent cuttings or mowing of large plots will keep mints at their prettiest. In late fall cut back to the ground and mulch if winters are severe.

Companion planting

Mint improves the growth and flavor of cabbage, broccoli, peas and tomatoes.

Propagation method Seed, cuttings.

Bloom time and color July-August; purple-pink.

Harvesting Harvest fresh leaves as needed. Just before blooming cut stalks and hang to dry; store in airtight containers.

Herbal uses

Decorative, culinary, medicinal. Attractive flowers. For culinary use as a flavoring. Use in vinegars. Grows well in containers. Use for tea or for drying

The aromatic leaves of spearmint and peppermint are widely used for flavouring and medicinal purposes. Mint is a popular flavour in many sauces, desserts, salads, jellies, chilled fruits, vinegars, and on potatoes and peas.

Spearmint Is the variety most used for culinary purposes, It is also used in mint jellies and mint sauces for veal and lamb dishes.

Peppermint is rarely used in cooking (peppermint oil is more suitable as a flavoring agent), but is widely employed for medicinal purposes. One of the leading applications of peppermint is in the preparation of mint tea, the most extensively consumed of the herbal teas, very popular in many countries, especially Germany and in North Africa.

Mint is also used in the preparation of other beverages, including liqueurs *(crdme dernenthe,* chartreuses, etc.).

The major uses of mint oils and menthol are as aromatic agents in toothpaste, mouthwashes and chewing gums. No mint oleoresin is commercially available.

Fennel

Foeniculum Vulgare

Umbelliferae family

Language and mythology

Native to the Mediterranean area, fennel was considered a magical herb that could ward off evil. It is referenced in the myths and folklore of many countries. The name is derived from the Latin foenum meaning 'hay.' An early Greek name for fennel was marathron meaning 'to grow thin.' It was associated with weight loss in medieval times. The seeds are considered an appetite suppressant.

Description

The plant's long, carrot-shaped root produces a round, finely grooved stem with bluish stripes. The dark green leaves are alternately branched from joints on the stem and dissected into numerous filiform segments. The small yellow flowers are on largecompound umbels. The oblong fruit has prominent ribs.

Plant type and hardiness

Semihardy perennial; hardiness zone 6.

Height and width

Height 48 to 80 inches; width 36 inches.

Light and soil

Full sun; average, very well-drained soil with a pH of 6.5.

Pests and disease

None noted.

Cultivation

In late spring or early summer, sow seeds directly into the garden in shallow drills about 6 to 12 inches apart. Thin seedlings to 8 inches apart. Heavy clay soils will hinder seed growth. Keep beds moist until the first few leaves appear; then do not overwater.

Companion planting

Do not plant fennel near coriander, caraway, or wormwood as they hinder each other's growth. Also, do not plant near tomatoes or dwarf green beans.

Propagation method Seeds.

Bloom time and color July to October; yellow.

Harvesting

The foliage of fennel cannot be dried successfully because of its high moisture content. It can be chopped, covered with water, and frozen in ice cube trays. Sprigs can be frozen wrapped in foil for some weeks. To dry seeds, harvest in autumn. Snip off heads and dry for a few days. Shake out seeds and store in an airtight container.

Herbal uses

Aromatic, cosmetic, culinary, decorative, and medicinal. Fennel adds fragrance to creams, perfumes, soaps, liqueurs, and potpourris. An infusion of ground stems is used for cleansing andmedicating the skin. The licorice-flavored plant is used in sauces, soups, stews, and salads and as garnish for fish. The stems can be eaten like celery, and the roots can be boiled as a vegetable. The seeds can be used whole or ground in desserts, breads, cakes, cookies, teas, and beverages. The plant is used to make bright yellow or gold dye. It also can be grown in large containers. Fennel is said to have some medicinal qualities.

Garden notes

Our plants grew much taller than we expected and became top-heavy with flower set. Plants should be supported when the bright yellow flower heads form. The umbels of flowers resemble those of dill, except that they are larger. The leaf sheathssurrounding the base of the flower petioles and stems have a licorice flavor.

Oregano
Origanum vulgare
Labiatae family

Language and mythology

The name oregano is derived from the Greek oros meaning 'mountain' and ganos meaning 'joy.' The plant grows wild in the mountains of GrEUe and is commonly called wild marjoram. The Greeks used it as a poultice for wounds, and Pliny recommended it for scorpion and spider bites. The colonists brought it to America, where it escaped into the wild.

Description

Oregano's creeping rootstock produces square, hairy, erect, purplish stems. The purple to white flowers are 1/4 inch long, two-lipped, tubular, and in terminal spikelets. The leaves are opposite, ovate, and up to 2 inches long. The fruit is comprised of four seedlike nutlets.

Plant type and hardiness Perennial; hardiness zone 5.

Height and width Height 12 to 24 inches; width 10 to 20 inches.

Light and soil

Full sun; well-drained, average soil with a pH of 6.8.

Pests and disease

Root rot, fungal disease, spider mites, aphids, and leaf miners.

Cultivation

Take cuttings of new shoots (about 3 inches long) in late spring once the leaves are firm enough to prevent wilting when placed in sand. Plant well-rooted cuttings in the ground about 12 inches apart or plant outside in pots. If seeds are used, sow them in a seedbox in spring; plant outside when seedlings are 3 inches tall. Cut out old wood that becomes leggy at the end of winter and replace plants every four years or so to prevent legginess.

Companion planting

Oregano attracts honey bees, which pollinate other flowering plants.

Propagation method Seeds, cuttings, and root division, all in spring.

Bloom time and color July to September; purple to white.

Harvesting

Harvest in summer or early autumn, just before the plants are in full flower. Cut the stems with flower heads attached and hang upside down in a cool airy place. Catch the leaves that fall as the plants dry. Strip leaves and flowers after they are crispy and dry.Store in an airtight container for many months for a pungent and flavorful herb. Oregano also can be frozen in ice cube trays or frozen fresh in foil for use within two weeks.

Herbal uses

Cosmetic, culinary, decorative, and medicinal. Oregano is used in bath oils and sachets to help relieve aches and stiff joints. Fresh or dried leaves flavor tomato sauce, vinegar, butter, omelets, quiche, bread, marinated vegetables, beef, poultry, game, onions, black beans, and zucchini. Dried flowers are used in decorative arrangements and for fragrance in potpourris. Fresh sprigs are used to make wreaths. Oregano also is used to make red dye. It has attractive flowers and can be grown in containers. It is said to have some medicinal qualities.

Commonly called the pizza herb, oregano is particularly important

in Italian and other European cooking, where it is widely used with tomato, cheese, beans, aubergine, zucchini, fish, shellfish, gravies and meat, especially beef and lamb.

The more pungent Mexican variety is used in cooking chilli con carne and enchiladas, or in chilli powder.

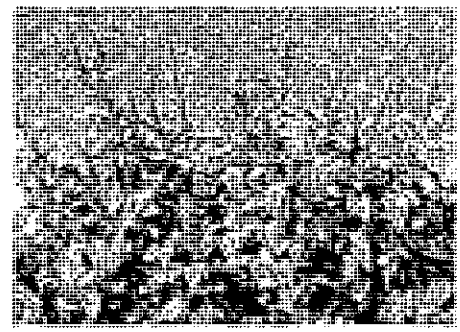
The herb is also used by industrial food processors as an anti-oxidant to curb rancidity in foods with high fat content, such as sausages.

The dried herb, tincture and essential oil are all used for flavouring meat, tomato sauces, stuffings, cheese, soups and in certain liqueur formulations. Oregano is often one of the herbs in mixed herbs and Italian seasoning.

Garden notes

With its low compact growth, oregano makes a good border plant. Once in bloom, our plants produced flowers throughout the growing season. We kept the plants pinched back to encourage bushier growth. Oregano is closely related to marjoram, but it has a coarser texture and a stronger flavor.

Sage
Salvia officinalis
Labiatae family



Language and mythology

The name sage comes from the Latin salvere or salvation meanin'to be in good health, to cure, to save.' Sage was a sacred ceremonial herb of the Romans. It was associated with immortality and was thought to increase mental capacity in ancient times, as referenced in the proverb, "How can a man grow old who has sage in his garden." Sage is found on many continents. The Chinese valued it for use in teas, and the American Indians used it for medicinal purposes.

Description

Sage has square, downy stems that become woody after the second year. The paired leaves are 2 inches long and grayish green with soft, velvety hairs and pronounced veining underneath. Yellow blotches appear on old leaves. The deep-throated mauve-blue flowers grow in whorls. They are two-lipped, have a bee-shaped calyx, and are 1/2 to 3/4 inch long. The tiny ovoid seeds are dark brown.

Plant type and hardiness

Perennial, hardy evergreen shrub hardiness zones 4 to 8.

Height and width

Height 12 to 30 inches; width to 24 inches.

Light and soil

Full sun; fairly rich, light, dry, well drained soil with a pH of 6.4.

Pests and disease

Root rot, slugs, spider mites, spittle bugs, and wilt.

Cultivation

Sow in spring and transplant to 2 feet apart when seedlings are 4 inches tall. The site should have well-drained soil and plenty of sunlight. Keep the soil moist when seedlings are young. When the plants are well established, water only in dry weather.

Companion planting

Sage attracts bees and grows well with rosemary. Sage also helps repel cabbage butterflies and improves the flavor of cabbage.

Propagation method

Cuttings, layering, division, or seeds.

Bloom time and color

June; mauve-blue, pink, and white.

Harvesting

Harvest sage before the plant flowers. Gather sprigs, tie in loose bundles, and hang upside down in a cool, airy place. Branches also may be placed on wire racks in a warm location out of direct sunlight. When the sprigs are dry and brittle, remove the leaves from the stems. Store either whole or crumbled in an airtight container. Fresh sage may be chopped, placed in an ice cube tray with water, and frozen.

Herbal uses

Aromatic, cosmetic, culinary, decorative, and medicinal. Sage is used for insect repellent and for fragrance in potpourris. It also is used for infusions to color hair silver and it stimulates the skin in facial steams, baths, and lotions. It flavors vinegars, herbal butter, omelets, soups, and poultry stuffings. Fresh sage is sometimes added to salads. Because it dries well, it is used in herbal wreaths (especially culinary) and nosegays. It can be grown in containers. It is said to have some medicinal qualities.

There are many species of *Salvia* (family Labiatae) which are generally known as sage. The most commonly traded sage herb is *Salvia officinalis,* also known as Dalmatian sage. Sage is a strong aromatic herb with a bitter aftemote. The dried herb is prepared from the leaves; its chief uses in cooking are with fatty meats such as pork, sausages and seasonings for poultry. Large quantities are used in commercial meat processing and packing. It also flavours cheese, baked fish, soups, dressings, vegetables and tomatoes and is an important component of mixed herbs.

Sage leaves are used in herbal teas and for medicinal purposes. Sage oils have long been used to flavour liqueurs, bitters, condiments, cured meats, as well as in perfumery formulations. Sage oleoresin, probably the second most important oleoresin

after celery seed, is a substitute for the dry herb as a flavouring agent in industrial meat processing (pork and other meat sausages, and poultry stuffings).

Garden notes

The common silver sage, the purple variety, and two variegated forms of sage were a major part of our garden. They filled out well, and their coloration provided great contrast. We harvested large quantities throughout the season, with a single plant producing more leaves than expected.

The uses of some other herbs known in international trade are summarized below.

Bay (laurel) leaves

The leaves of the bay tree *(Laurus nobilis)* are used to flavour soups, stews, game dishes, fish and fish sauces, puddings, pickles and mixed pickling spice, and as a garnish for salad dressings and pickled meats. They are a traditional ingredient in curries and a basic component of the bouquet gami. They are commercially used to flavour various types of canned and preserved vegetables, meat and fish.

The bay tree is also cultivated as an ornamental plant, Bay berries are pressed or distilled to give a thick greenish oil used in some liqueurs.

Dill

The dill, a member of the Umbelliferae or parsley family, has two species of interest to this study: the cultivated or European dill *(Anethum graveolens)* and the Indian or Japanese dill *(Anethum sowa).* The leaves of the European dill (also called dill weed or dill herb) and the fruit (seed) of the Indian dill are traded internationally, mainly for use as food flavoring and seasoning.

The fresh herb is widely used in Asia and in Scandinavia, Germany and Eastern Europe as a flavoring for many food items, including pickled cucumber, vinegar, salads, pickled and fermented cabbage, sauces, marinades, vegetables, soups and particularly fish. The Scandinavian *gravlax* (salmon marinated in dill) is a classic example of a dill-flavored fish dish.

In the Balkan and Middle Eastem countries, yoghurt, sour cream, chicken, stuffed vine leaves and soups are flavoured with dill.

The flavour of dill seed differs substantially from that of dill weed. They can therefore not be used as substitutes for the other.

Seed and herb oils and, to a much more limited extent, the oleoresins find many

commercial applications in compounded seasonings and flavourings for food products such as meat preparations, desserts, pickles, alcoholic beverages, as well as in the perfumery and soap industries. In Germany and the United States of America in particular the herb oil is used mainly in the production of pickled cucumber.

The seed oil, particularly that of *Anethum graveolens,* has carminative, stomachic and stimulant properties and is recommended for digestive problems.

Parsley

Parsley is one of the best known and most used cooking herbs, partly because it is grown and cultivated worldwide in many varieties. Although mostly used as fresh herb, it is also widely available in dehydrated and, more recently, in frozen form.

The aerial part of the plant is widely used as a kitchen herb, as a flavour and for garnishing soups, salads, meats, fish, poultry, sauces, gravies, egg and cheese dishes, vegetables, etc.

The stems are dried and powdered for use both as food colour and dye. The leaf-stalks of the Neapolitan or celery-leaved parsley are blanched and eaten as a vegetable, while the Hamburg or parsnip-rooted type is cultivated for its fleshy root.

Three essential oils are obtained from parsley: parsley seed oil (obtained by steam distillation of ripe seeds), parsley leaf oil (from leaves and flowering tops), and parsley herb oil (distillation of the whole plant). An oleoresin is also obtained from the seeds. The essential oils and oleoresin are used to flavour canned and cured meats and as condiments in the formulation of compounded aromas.

Infusions and decoctions of parsley leaves and roots are used for pharmaceutical purposes. Parsley is a rich source of vitamin C, iodine and iron. It is usually included in mixed-herb blends.

Rosemary

Rosemary *(Rosmarinus officinalis)* is a versatile herb lightly used in French, Greek, North African, Portuguese and Spanish cooking, but extensively used in British and Italian cuisine.

The herb flavors meats, including sausages and lamb, sauces, vegetable dishes, poultry, seafood, stews, marinades, etc. It is often included in the bouquet gami and mixed herbs, but it needs care in use, for too much can overpower the other

ingredients in a recipe.

Rosemary is also employed for its anti-oxidant properties in the industrial manufacture of meat-based products.

Rosemary leaves yield a pale yellow essential oil by steam distillation. The oil is widely used in hair shampoos, bath essences, deodorants, cosmetics, perfumes (especially eau-de-Cologne) and insect repellents.

Savory

Only two species of savory, the annual *Satureia hortensis* and the perennial *S. montana,* are generally commercialized. The distinguishing peppery taste of the plant with a flavour somewhat similar to thyme gave rise its everyday names of *Pfeiffer kraut* (pepper herb) in Germany and *poivre d'ane* (donkey's pepper) in France. Its main traditional kitchen use is as a flavouring for vegetables, beans and peas, particularly in France, Germany, the Netherlands, Switzerland and the United Kingdom. It is also known by the names of *Bohnen Kraut* in Germany and *boonen kniid* in the Netherlands (bean herb).

Savory blends well with other herbs and is used in bouquets garnis and in fine-herb mixtures for flavouring sausages, stuffings, poultry, soups, eggs, salami, herb bread, fish, salads, sauces and stews. In Belgium and the Netherlands, savory is also employed for pickling and marinating.

The dried product and the tincture are also used in making vermouths and bitters (especially in Italy). Very small quantities of essential oils obtained by steam distillation are used as flavouring in the food industry(for soups and prepared meats) as well as in perfumery.

Tarragon

The fragrant leaves of tarragon *(Artemisia dracunculus)* are used, fresh or dried, as a gourmet herb in French cooking and as a popular herb in other European and in American cuisine. Tarragon goes into the preparation of tarragon vinegar (used in salad dressings and mayonnaise) and flavours mustard, soups, stews, eggs, chicken and other meats, salads, lobsters, pickles, mushrooms, gerkins and fish dishes. The plant is an essential ingredient in fine-herb mixtures. It is also used to garnish fresh salads and flavour various liqueurs, and in perfumery.

The pale-yellow essential oil produced by steam distillation of the whole upper part of the plant has applications in pickle canning, as a flavouring for vinegar and liqueurs, in perfumery and in the manufacture of scented toilet preparations.

Only extremely small quantities of tarragon oleoresin are used in vinegar manufacturing.

Thyme

Thyme is a common kitchen herb in Europe and the United States. The traded thyme is derived mainly from the flowering tops of the garden thyme *(Thymus vulgaris)* and the white thyme (T. *zygis).* Other varieties are locally used, including the wild thyme (*T. serpyllum);* lemon thyme (T. *citriodorus);* golden thyme (T. *aureum);* and mint, orange and caraway thymes (T. *herba-barona).*

All these varieties have a wide range of culinary, medicinal and decorative uses. The herb is commonly used in stuffings and is an essential component of the bouquet gami and mixed herbs. It is widely used to flavour soups, cheese, liver and pork sausages, vegetables, fish, game, poultry, pizzas, Italian-style sauces and some liqueurs.

Honey made from Greek wild thyme is famous for its unique flavour.

The thymol content of the plant gives it strong germicidal and antiseptic properties. Thyme is therefore employed in the treatment of coughs and catarrh, as a fungicidal ingredient, and in many anti-mildew preparations.

The essential oil is mainly used for the above medicinal and germicidal purposes. It is likewise utilized in perfumery, the manufacture of bath preparations, toothpastes and mouthwashes, and extensively in food flavourings.

The meat industry uses very small quantities of thyme oleoresin as flavouring.

The structure of trade and distribution

1. Trade structure: general characteristics

Herbs and spices generally have the same trade structure and distribution channels. Very few dealers and brokers deal exclusively with herbs. Direct trade between medium-sized and large producers/exporters in developing countries and grinders/processors in consuming markets is generally tending to rise.

The number of brokers/dealers in Western Europe has decreased substantially during the last two decades. For example, while over 10 companies handled this trade in Rotterdam in the 1970s, only three are still in the business today.

Structural changes, partly as a result of increased direct trading, are blurring the functional distinctions between the specialized categories of traders, i.e. agents/brokers and importers/dealers. Dealers or importers generally act as intermediaries between exporters or shippers in producing countries and spice grinders and processors. Brokers or agents may, in several countries, act as intermediaries between exporters and importers/dealers or between importers/dealers and grinders/processors. Large importers undertake cleansing and grinding activities. However, the largest food chains (retailers) carry out their own importing, grinding and packaging.

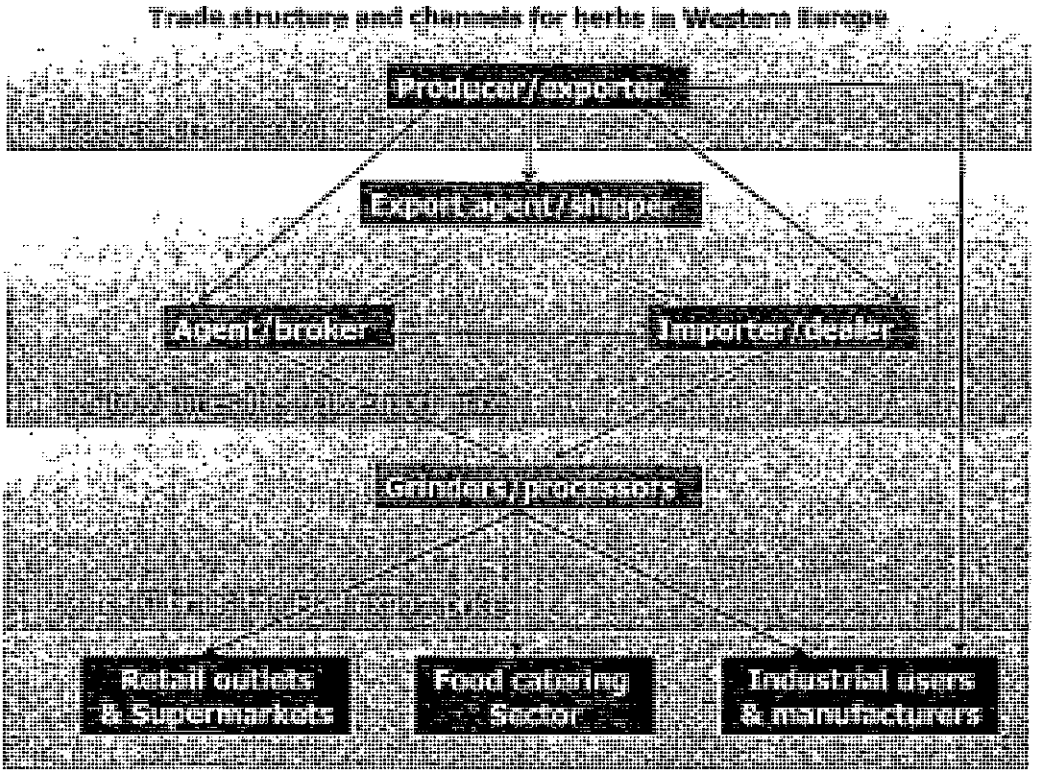
Large processors continue to use the services of specialized traders to obtain small consignments of herbs or additional requirements at short notice and at competitive prices.

The figure on the next page presents an overview of the trade structure and distribution channels in Western Europe, including the countries covered by this report. The heavy lines indicate the marketing channels most often used by exporters from developing countries.

The leading brokers and importers/dealers are established in the major trading centres of the main importing countries: Amsterdam, Hamburg, London, Marseille and Rotterdam.

The herb trade is highly dependent on mutual trust and confidence between the supplier and the processor. The major herb grinders/processors as well as the large trading companies establish close relationships with their main suppliers through visits and provide technical assistance services on such matters as harvesting and production.

New suppliers are generally requested to provide trade references before being offered a deal. Most of the trade is concluded on the basis of samples.



2. Processing of herbs at source; recommended trade channels for Egyptian producers/exporters

Producers/exporters in Egypt could add value to their products and increase their returns by processing the herbs at source. They have the advantages of having the raw materials at hand, as well as reduced transport and labour costs. However, there are a number of obstacles to successful processing of herbs at source beyond the stage of primary processing:

1. The initial outlay on capital equipment may be sizeable and there may be constraints to importing packaging materials, solvents and fuel. Furthermore, the know-how might be expensive to acquire from processors in developed countries.

2. Herb processors in final markets have developed long-established links with their customers and are in a better position than distant processors to know the requirements of the local market and of individual end-users. For instance, in Europe herbs and herb mixes cater to regional tastes and it is very difficult for a foreign firm to produce the preferred regional blends. The position of European processors on domestic markets and

their considerable financial power are a barrier to the entry of herbs processed elsewhere.

3. Phytosanitary regulations are more stringent on processed herbs than they are on the unprocessed products, Several Western European importers are reluctant to take processed herbs because, if contaminated, these herbs are more difficult and moxe costly to clean than whole leaves.

4. Several herb processors in Western Europe may react to challenges on their markets by campaigning to retain their consumers' loyalty, either by offering cash inducements for supply contracts or by stressing the higher quality of domestically processed herbs. Traditional herb processors are reluctant to handle imported ground herbs, especially retail packs, since they regard such handling as usurping their own basic business of grinding and packing.

The high costs of grinding in Westem Europe has led to an increase in the proportion of imports in ground form. Although small in actual tonnages, the share of imports of crushed and ground thyme into the United Kingdom, for example, rapidly rose from 2.1% of imports of whole thyme in 1985, to 4% in 1986, 7.7% in 1987, 11.1 in 1988, 27.3% in 1989 and 35% in 1995.

There is also a growing market in Europe for authentic herbs and spice mixtures from origin. These are usually sold through specialist outlets dealing in exotic foods and in shops serving ethnic communities.

A small company seeking entry into the European market should contact a European agent or importer rather than a processor. The former will have considerable knowledge of market requirements and will be able to convey to the exporter the precise needs of individual companies as regards price, quality, quantities, packaging and so on. The agent/importer will also be in a position to facilitate the transaction. Appendix I lists the major herb brokers and importers in the countries covered by this report.

Medium-sized and large exporting firms could contact grinders/processors (see appendix II for a selected list of addresses). Direct trade with the latter may be possible.

As far as the retail sector in Western Europe is concerned, it is virtually impossible for herb exporters in developing countries seeking to promote their own brands to gain entry in any major way, without themselves or their agents setting up an extensive distribution network and allowing for large capital outlays. The alternative is to manufacture on a contractual basis for established retail packers in Europe. This can be done if the purchaser has significant cost

advantages and if the supplier's quality standards are high enough to protect the brand name.

3. Common contracting and payment practices

Most, if not all, herbs are contracted on the basis of samples (usually of 20 to 100 grams). Arbitration proceedings may be initiated if shipments fail to meet the standards of the sample. This can happen, for example, because the sample was sent before the harvest was properly under way or because of adulteration, inadequate drying, etc.

Disputes are most often settled amicably, but they can harm a supplier's reputation. The major importing countries have developed standard contract forms, of which the IGPA (International General Procedure Brokers' Association - which is based in London), Netherlands and Hamburg contract forms are specific to the countries discussed in this report. Each of the contracts cover such matters as quality, price, shipment conditions, arbitration and payment terms.

Most traders prefer to receive CIF or C &F port of destination quotations in the major trading currencies (United States dollars, deutsche mark, pound sterling). New producers/exporters are usually paid only after receipt and acceptance of shipment. Established suppliers are usually paid cash against documents.

Herb processors and traders may sign contracts for the coming harvests with exporters who have supplied products of satisfactory quality over several years; however, pre-harvest contracting is not generalized. Contracts are usually negotiated on the basis of approximate quantities to be delivered and purchasing price; the mode of delivery and terms of payment are likewise specified. The contract may also contain clauses on procedures to be followed if the harvest falls below expectations.

. Market access

The following Table gives the rates of duty applied to herbs in the European Economic Community.

In general, the market for herbs grown in EU in large quantities, such as parsley (fresh or dried), tarragon, savory, dill and marjoram, are protected by higher duties (16% *ad valorem).*

The stringent quality specifications, varying standards, and phytosanitary regulations in EU, primarily intended to protect consumers, may have the effect of restricting imports. It is often argued by both importers and exporters that the regulations are too restrictive and could reach the point of making it impossible

or much too expensive to supply herbs of the purity stipulated. These regulations impose costs on producers, although in the short term, owing to the comparatively inelastic demand, these costs may to some extent be passed on to the consumer. For some industrial users of certain herbs, there is always the prospect that users may switch to bacteriologically clean oleoresins if the qualities offered by the market do not satisfy requirements.

EU: customs tariffs on herbs

Heading	No.	Description	Rate of duty	
			Autonomous or Levy (AGR) (%)	Conventional (%)
07.09		Other vegetables, fresh or chilled		
	9090	Other (includes parsley, chervil, tarragon, savory, dill and sweet marjoram)	16	
07.12		Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared		
	90 90	Other	16	16
09.10		... thyme, bay leaves ... and other spices		
	40 11	Wild thyme *(Thymus serpyllum),* neither crushed nor ground	Free	-
	40 13	Other thyme, neither crushed nor ground	7	-
	40 90	Bay leaves	7	-
12.11		Plants or part of plants (including seeds and fruits), of a kind primarily used in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut or powdered		
	9090	Other (includes basil, wild marjoram, mint, rosemary and sage)	Free	Free

Source: International Customs Tariff Bureau, *The International Customs Journal, European Economic Community (EU), 1989-1990,* 14th ed. (Brussels, January 1990), no. 14.

Notes:

The customs duties applicable to imported goods originating in countries which are Contracting Parties to the General Agreement on Tariffs and Trade or with which the European Economic Community has concluded agreements containing the most-favoured-nation tariff clause shall be the conventional duties shown in column 4.

The autonomous duties shown in column 3 are applicable:
- when they are less than the conventional duties; or
- when no conventional duty exists, in which case a dash is shown in column 4.

The duties expressed as percentage rates in columns 3 and 4 are *ad valorem.*

Particularly difficult problems to surmount are the closed distribution networks for retail packs in markets in developed countries. Although exporters sell more and more whole or ground-in-bulk herbs direct to packers in the consuming markets rather than through brokers, exporters from developing countries still

cannot sell retail-packed herbs with any great success, either through their agents or through direct means. The reason is that the traditional, long-established herb houses in developed countries actively exercise their market power; the few dominant herb packers supply the major supermarket chains direct, partly because they are financially able to support exclusive contracts and advertisement campaigns that the smaller herb packers or wholesalers cannot. These packers also know their markets very well; their staff regularly service in-store racks for herbs and spices.

Sales are on the basis of delivery to the buyers' premises instead of ex factory or ex warehouse. This involves high distribution costs which smaller suppliers, especially from developing countries, do not have the capacity to meet.

Quality considerations

1. Quality requirements and standards

Quality considerations are of primary importance in the trade in herbs. Cleanliness, flavour, colour and aroma are the most important aspects for importers/buyers, but no specific grading system is generally accepted. Quality criteria vary from country to country and from herb to herb, with requirements often imposed by the large importing/processing companies.

The general trend is, however, for the various specifications to become more rigorous particularly with respect to cleanliness and the admitted levels of pesticides/herbicides.

A major feature of the European food industry is the growing consumer, manufacturing and governmental concern about food safety and health risks resulting from contamination. This concern is fully acknowledged by the herb-and-spice industry.

Only five international standards (see appendix) have been issued by the International Organization for Standardization (ISO). These give specifications for dried spearmint, peppermint, laurel leaves, whole thyme and dried oregano leaves.

In each of the four markets considered in this survey, major buyers/processors issue their own quality specifications, generally depending on the supply origin, with which exporters should comply.

The Appendix further lists as examples for the United Kingdom the general specifications for herbs and the specifications for spearmint of Moroccan and Egyptian origin issued by Lion Foods Limited, as well as the specifications for Egyptian peppermint of British Pepper & Spice Co., Ltd. A list of the standards on herbs and the general methods of analysis for herbs and spices of the French Standards Association (Association franchise de normalization, AFNOR) is also given, as are the analytical requirements for herbs imported into Germany

Purchases are usually made on the basis of samples analyzed by laboratories agreed upon by the buyers.

The standards institutions in the countries reviewed are currently working together with industry representatives on the formulation of official standards for herbal quality and safety. The British Technical Committee on Spices and Condiments has completed standard specifications for the most popular herbs and spices ready for food use. Like many other natural foods, herbs are

susceptible to soil, insect or mould contamination and must be microbiologically cleaned. An EU directive is likely to bring changes to the type of processing accepted in the EU herb industry in the near future. The directive calls for the outlawing of the currently used process of fumigating and cleaning herbs before further processing with ethylene oxide gas, which is suspected of being carcinogenic.

Decontamination of herbs by irradiation has received unconditional clearance (for gamma rays only) in France, Denmark, the former German Democratic Republic; a temporary clearance (for two years) in the Netherlands and provisional clearance in Belgium. Clearance has not been given by the other EU countries. On-pack labels of herbs so treated must indicate that the product is "protected by irradiation".

A proposed EU directive (1989) is currently being considered; it allows a number of food items, including herbs and spices, to be irradiated in member countries under the Single Law Act finalized before the end of 1992. However, all leading herb processors and packers believe that the consumer could well be hostile to irradiated herbs and foods.

Both buyers and sellers of herbs recognize the need for establishing specific quality standards, together with generally accepted methods of testing. The wide variations in existing standards create problems particularly for exporters.

2. Factors influencing the quality of herbs

The quality of herbs depends on several factors: the variety of plant, growing conditions, cultural practices, drying and processing methods used, storage and packaging methods and conditions.

The genetic characteristics of a particular variety of herbs obviously affect its properties and quality. Particular climatic and soil conditions can greatly influence herbal aroma and flavor. Producers must also be fully aware of the different types of diseases and pests that can affect herbs; they must likewise be familiar with accepted methods of eradication. In European markets, buyers are increasingly worried about pesticide and fertilizer residues; care must therefore be taken to choose pesticides, fertilizers and methods of eradication acceptable to the importing country.

Another capital factor influencing the quality of the herb is the time of harvesting, as the herb's content of aromatic and flavoring constituents varies during its life cycle. It is also vitally important that the harvested herbs be delivered as quickly as possible to the drying shed, not too tightly packed, and to avoid "sweating" during transportation.

In order to be traded internationally, herbs must be correctly and properly dried. Drying of the harvested herb to maximum moisture content of 5 to **10%** helps minimize spoilage and avoid microbiological contamination. The dried herb must retain much of its original color.

The methods of drying depend on the species and the part to be dried. Large quantities of herbs are dried naturally in the shade, but artificial drying is increasingly employed, as it yields a superior quality, retaining much more of the original flavor and avoiding the hay-like taste. In all cases, drying areas should be perfectly clean, free of dust, well ventilated, and protected from animals and other sources of contamination.

Spreading in thin layers speeds up the drying and can prevent spoilage by overheating or moisture condensation. The drying temperature also has a direct and strong influence on quality. For culinary herbs, this temperature should not exceed 40'C in order to preserve the essential oil content, and hence the flavour.

Nearly all herbs entering international trade are dried, but not further processed for several reasons:

1. The level of contamination is easier to determine on un-ground herbs.

2. As ground herbs lose their essential oil constituents and characteristic aroma much quicker than un-ground herbs, they cannot be stored as long as the latter.

3. Grinders can much more easily maintain their quality standards and blend herbs to purchasers' specifications by keeping stocks and mixing un-ground herbs of different qualities and origins. Food manufacturers, in fact, do not usually import or process herbs, but purchase them according to their own established specifications from grinders and processors.

4. Financial and technical difficulties would make it uneconomic for producers of herbs to establish further processing facilities unless they also have to supply a large domestic market.

Although herbs can maintain their flavor for long periods if stored and packed under correct conditions, they tend to lose it a little faster than spices. Dried herbs store best in the whole or leaf form, and most buyers choose this form of storage, while turning over their stocks relatively quickly.

Storage in airtight containers in dry, dark places where the temperature does not

exceed 18 C prevents deterioration (loss of flavor, caking because of dampness) and limits contamination.

Satisfactory packaging materials include laminated paper bags, cardboard containers, tins, jute sacks, and various other types of containers made of natural or artificial fibers.

Retail packaging

The most important requirements for herbs in retail containers in Europe (and elsewhere in general) are a long shelf-life and preservation for as long as possible of their color and flavor. A container must therefore re-close securely and maintain the herb in good condition, taking into account the fact that herbs and spices are usually kept in the kitchen, often in the hottest and dampest areas.

Containers of dried herbs and spices present these products not merely as essential cooking ingredients but more like luxury or status items. The containers are often displayed on shelves and specially made racks, usually as a "family" of containers of the same appearance, size and brand.

The most marketed type of container is the glass jar, usually fitted with a colored plastic screw cap. Such a container opens and recloses easily, preserves the volatile components better than most other packing alternatives and preserves the contents from moisture and unpleasant colors.

The glass container itself is thick and heavy to withstand frequent handling and falls. The colored, glossy, well-designed labels on the glass are often the key to moving the product off the supermarket shelf into the home. The best alternatives to glass jars are cardboard refill packs and plastic pots. According to estimates for 1996, McCormick's sales by volume in Europe were split at about 40% for glass jars and **65%** for refill packs. Most other manufacturers predominantly use plastic packaging.

One of the most significant trends throughout the 1980s has been the marked swing away from glass jars and cardboard refill packs to larger refill packs, drums, tubs and plastic pots.

Sachets made of laminated materials are also used but are not very popular. They are usually of paper/polyethylene laminate or, for longer shelf-life and better retention of volatile constituents, of paper/polyethylene/ aluminium foil.

Special selections of dried herbs for ethnic cooking are commercialized in bags or sachets, with recipes frequently printed on the back of the package.

Fresh herbs are usually packaged in polystyrene trays covered with clear plastic or in see-through plastic containers. The main disadvantages of these types of packages are the comparatively large quantities of herbs they contain (i.e., quantities exceeding those required for one use) which do not conserve well, and the fact that many consumers in Europe consider polystyrene tray packages a polluting reject.

The favoured packaging for freeze-dried herbs tends to be shatter-proof polyethylene terephthalate, which offers better protection against contamination than glass or plastic.

Prices and profitability

I. General factors Influencing prices

Prices are generally rising as a result of both increased supply costs (production, processing and freight) and increased demand. However, as for most agricultural products, herb prices tend to fluctuate widely. The degree of fluctuation varies from herb to herb, **quality** being an important influencing factor. The specification determining the price of most herbs is the percentage of volatile oil, which gives the flavor strength: the higher the volatile oil content, the higher the price. It is essential to note that a higher priced herb might in fact be cheaper to the end-user, because it will go further in flavoring the finished product. Prices axe also influenced by the content of extraneous matter: a contaminated herb, or one containing too large a proportion of stems will command a lower price. It is, however, worth mentioning that further cleaning may sometimes not raise a producer's net receipts, as the extra cleaning costs may be higher than the resulting additional revenue.

In general, industrial users tend to pay a lower unit price for most herbs, because the products they use are usually of a lower quality in terms of visual appearance.

Price fluctuations are caused mainly by the supply situation: good harvests generally depress prices, while poor crops have the opposite effect. The harvest is dependent on weather conditions (rainfall and the duration of sunshine in particular), pests and diseases, as well as the implications of government policies.

The level of producers' prices in turn has a direct influence on planting and collecting decisions. Low prices over a long period lead to substitute planting of more profitable crops or to an unwillingness to collect herbs from the wild. These in turn result in shortfalls in supply, subsequent price increases and consequent intensification of price fluctuations. The size of these fluctuations varies from herb to herb and is affected by supply and demand and the ease with which a herb of satisfactory quality can be produced.

Unlike mint, parsley, sage and thyme, few herbs are in sufficient demand to encourage their widespread commercial cultivation. The cultivation of most herbs can be expanded fairly quickly; therefore, even if supplies in the short term are relatively inelastic (generally one harvest per year), they are much more elastic over the long term. It is unusual for prices to remain high for several successive seasons.

Another reason for the fairly inelastic demand over the short term is the unwillingness of processors and end-users -industrial food manufacturers in particular– to make sudden alterations to their formulations and supply origins. In the long term, however, the availability of alternative sources of supply or of close flavoring substitutes may result in a fairly elastic demand, especially for some individual herbs.

Overall, the level of stocks does not appear to have a great stabilizing influence on prices. When prices are low and expected to rise, buyers may purchase much more than their normal requirements (usually from one harvest to the next, i.e, over a period of one year), and vice versa. Large importers and dealers maintain stocks in order to minimize the effect of price fluctuations and also to be able to satisfy short-term purchase requirements, However, most other users of herbs do not like to hold large stocks, partly because of quality deterioration problems, and partly because it is expensive to stock products of comparatively low value and high bulk.

Herb prices also depend on shipping costs and port and handling charges. Freight charges, calculated on the basis of cubic volume, account for a large part of the total price of herbs because of the ratio of their bulk (which is high) to their value (which is comparatively low).

Traders' profit margins likewise contribute to the variation in herb prices. According to trade estimates, agents, brokers, dealers and importers charge prices that are generally 1.5 to 2 times higher than the exporters' FOB prices. Grinders/processors charge end-users, i.e. retail outlets, food caterers and industrial users, 3 to 10 times the exporters' FOB prices.

2. Current price levels

As mentioned earlier, the export prices of herbs vary widely according to the variety, origin and quality of the product, as well as the quantities purchased. Wide differences exist between the prices of low-quality herbs, those of Fair Average Quality (FAQ) and the handpicked qualities. Prices were stable during the period January 1997 to April 1998. The following table gives the CIF spot New York prices of the most traded herbs during the period.

Spot prices of the most traded herbs, January 1998 and April 1998 United States dollars per ton, CIF New York)

Herb	*Origin and quality*		*January1997*	*April 1998*
Basil	Egypt	FAQ	1,050	1,325
		Fancy	1,321	1,882
		XF stemless	1,892	1,921
		Recleaned	2,111	2,153
	United States	Medium cut	7,325	8,252
Marjoram	Egypt	FAQ	1,289	1,531
		Fancy	1,325	1,792
Oregano	Turkey	30 Mesh fancy	2,124	2,645
		30 Mesh FAQ	2,111	2,823
	GrEUe	30 Mesh	2,892	2,943
	Mexico	Whole leaf	2,500	2,529
Parsley	Israel		5,000	4,930
Rosemary	France, Albania		1,982	1,992
	Yugoslavia			
	Morocco, Portugal, Spain		1,321	1,652
Sage	Yugoslavia: Dalmatia		4,832	4,514
	Yugoslavia: other		3,512	3,634
	Albania		2,843	2,662
	Turkey		2,330	2,415
Tarragon	France, United States		14,125	14,325
Thyme	Spain		1,921	1,998
		Fancy	2,500	2,300
	Morocco		1,680	1,682

Source: http://www.herbmarket.com/.

Tarragon is the most expensive culinary herb (around $14,000 per ton for the French varieties), followed by parsley ($4,000 to 5,000 a ton) and Dalmatian sage ($4,000 to 4400 per ton). These herbs command higher prices because of their specific flavoring properties and because supplies hardly match demand. By contrast, the widely available rosemary and basil are among the least expensive and most stable priced herbs. Dill prices are also comparatively stable as several countries meet domestic demand for the herb from local production.

A comparison between wholesale prices and retail prices revealed the following conclusions:

1. Wholesale prices for deliveries of a minimum of 1 ton of marjoram, oregano, rosemary, sage and thyme are about 2 to 2.5 times higher than the prices on the New York spot market; tarragon is about 30% more expensive while basil prices are more or less similar.

2. Wholesale prices of deliveries of 500 kg of the different herbs offered are 1 to 3 times higher than the prices of deliveries of a minimum of 1 ton; this is also true of deliveries of 250 kg in relation to 500 kg deliveries.

3. Wholesale freeze-dried parsley is about 11 to 18 times more expensive than the dried rubbed herb, depending on the quantities traded; freeze-dried tarragon is 5.3 times more expensive than the dried French grade 1.

4. Retail prices are much more dependent on the quantities traded and the type of packaging. Large retail deliveries in 3 kg bags are similarly priced to wholesale deliveries of a minimum of 1 ton of tarragon, thyme and mixed herbs, but are priced 1.3 to 3 times higher than wholesale deliveries of a minimum of 1 ton of all other herbs.

5. The retail prices of herbs in the smallest polypropylene sachets are, depending on the type of herb, between 25 times (tarragon) and 180 times (bay leaves) higher than the wholesale prices of deliveries of a minimum of 1 ton.

6. Retail prices decrease very sharply with the rise in the quantities traded.

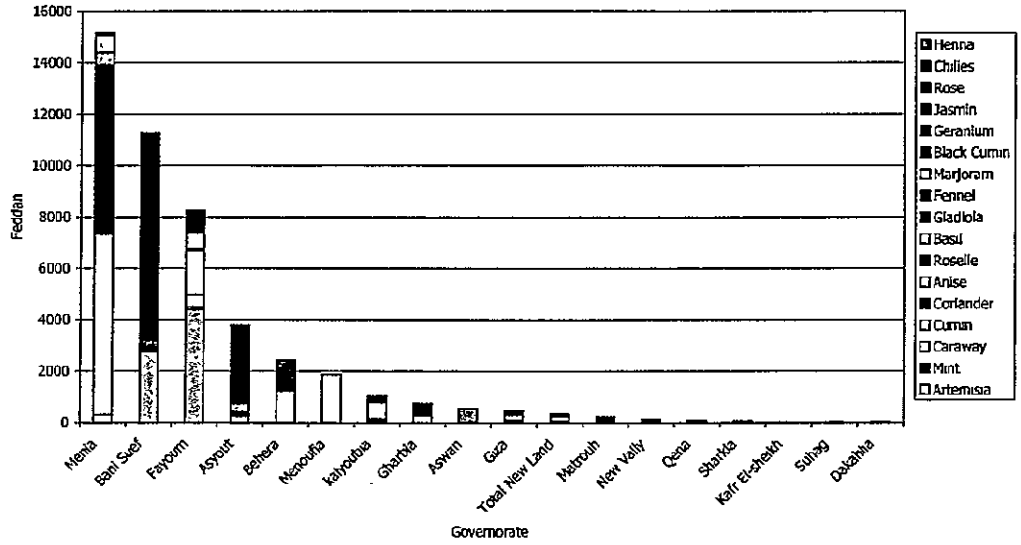
7. France, Germany and the Netherlands have the same levels of wholesale and retail prices for processed herbs. Prices vary similarly with the quantities traded.

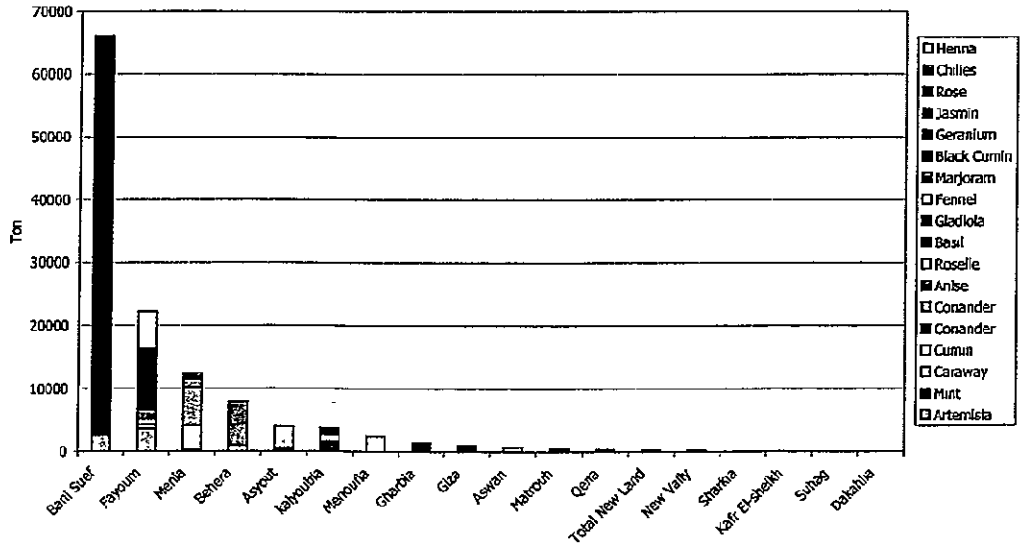
Current production and trade of medicinal and aromatic herbs in Egypt

Egyptian grow a wide variety of herbs very long time ago. The pharos know some attractive uses in such herbs and draws them on their temples wall.

Traditionally, the majority of herbs are grown mostly in Upper Egypt and fayum areas where temperature degrees are high enough to grow them successfully.

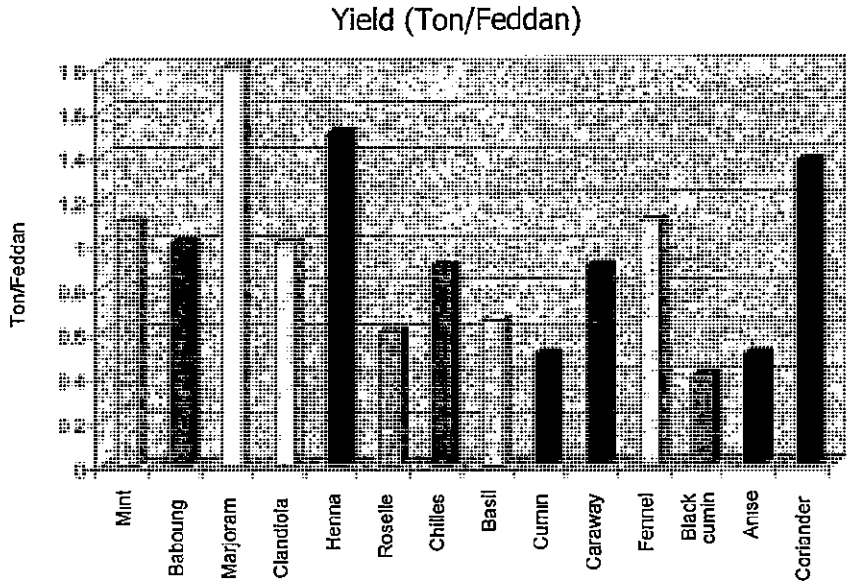
Geographical Distribution of Herbs in Egypt 98/99



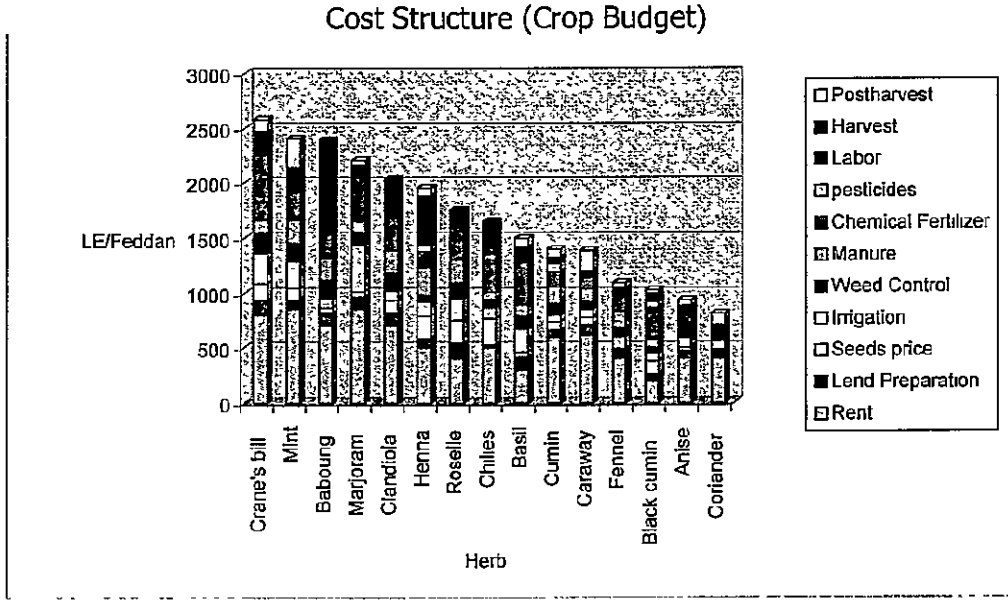


The most important herbs grown in Egypt 1997/98 are Marjoram, Caraway, Fennel, Coriander, baboung and Chilies.

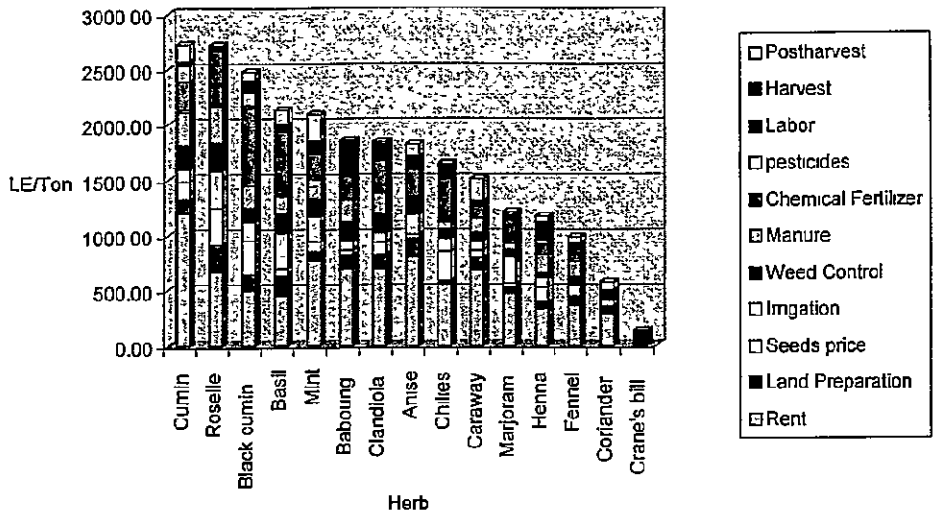
Yield (ton/feddan) differs greatly from one herb to another. Marjoram, Coriander, and fennel are among the highest productive items in herbal industry in Egypt. Moreover yield falcate greatly from one year to another.



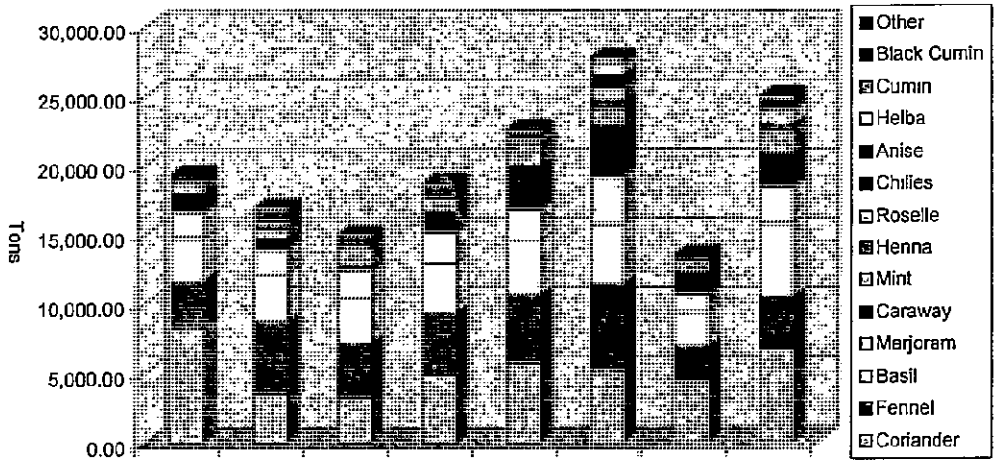
Costs of production differs greatly from on herb to another and hence the total return. Chemical fertilizers and harvest are the most cost significant items for the majority of them.



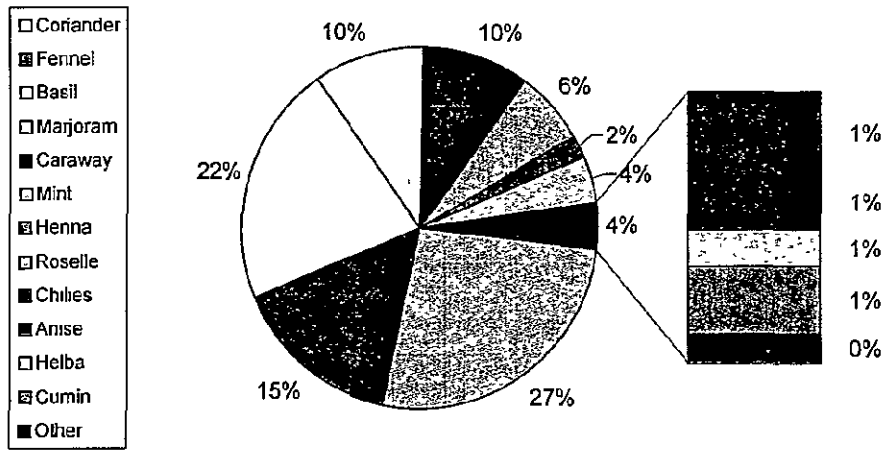
Cot per Ton of production



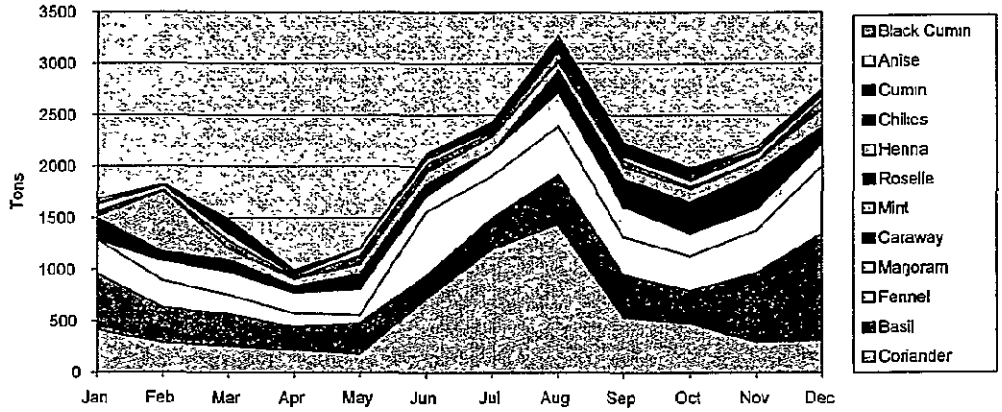
Exports 1992/1999



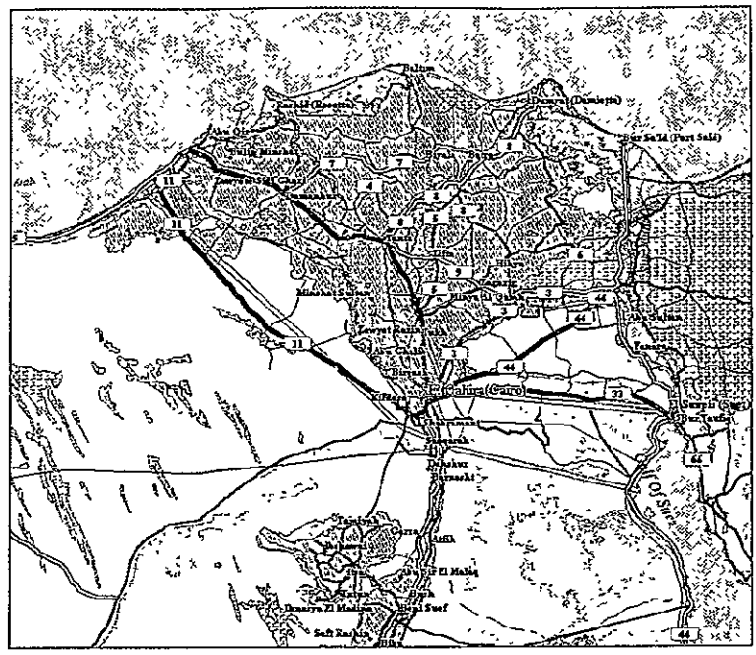
Export structure 1999

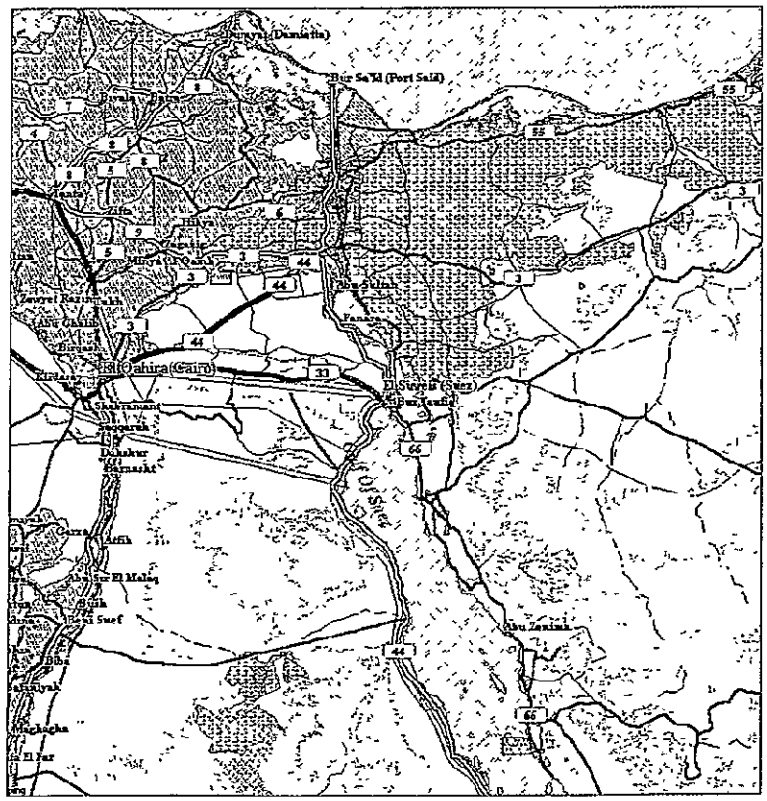


Seasonal Exports 1999



Potential new growing areas:





Egypt: Production of major culinary herbs grown in Egypt

(Area by Feddan and Production by Ton)

Product	1996/97			1997/98			1998/99		
	ea	eld	oduction	ea	eld	oduction	ea	eld	oduction
Caraway	4,755.00	0.90	4,279.50	4,827.00	0.90	4,344.30	1,431.00	8.00	11,448.00
Cumin	9,149.00	0.50	4,574.50	7,663.00	0.50	**3831.5**	4,675.00	0.40	**1870**
Coriander	6,856.00	1.37	9,410.00	9,410.00	0.90	8,469.00	11,837.00	0.90	10,653.30
Anise	1,059.00	0.50	529.50	500.00	0.50	**250**	562.00	0.50	**281**
Fennel	3,135.00	1.10	3,448.50	2,072.00	1.20	2,486.40	2,359.00	1.00	2,359.00
Mint	1,049.00	1.10	1,153.90	1,218.00	1.50	**1827**	1,316.00	1.30	**1710.8**
Marjoram	1,613.00	1.80	2,903.40	2,207.00	2.00	4,414.00	2,485.00	1.71	4,244.50
Jasmine	520.00	3.00	1,560.00	388.00	3.00	**1164**	335.00	3.20	**1072**
Crane's bill	8,044.00	30.50	245,342.00	6,615.00	39.20	259,308.00	2,089.00	26.30	54,940.70
Basil	3,334.00	0.66	2,193.00	5,695.00	1.90	**10820.5**	5,137.00	1.90	**9760.3**
Roselle	3,655.00	0.60	2,193.00	8,349.00	0.50	4,174.50	5,242.00	0.50	2,621.00
Chilies	667.00	0.90	600.30	1,316.00	0.90	**1184.4**	1,000.00	0.90	**900**
Black Cumain	11	0.40	4.4	10	0.50	5.00			
Henna	299	1.50	448.5	650	1.50	**975**	585	1.50	**877.5**

Source: Ministry of Agriculture, Undersecretary for horticulture, Dept. of aromatic and medicinal plants.

Cost per feddan for the major culinary herbs grown in Egypt, 1999

LE/Feddan

	Land Rent	Land Preparation	Seeds	rrigation	eed Control	Manure	Chemical Fertilizer	pesticides	Labor	Harvest	ostharvest	Total Cost
Crane's bill	800	137	150	277	192	105	596		40	168	120	2585
Mint	850	90	100	250	168	200	250		62	168	270	2408
Baboung	700	120	50	80	168	200	210		63	800		2391
Marjoram	850	116	50	420	120	100	390		62	60	40	2208
Clandiola	700	120	120	80	168	200	290		62	300		2040
Henna	500	90	200	130	60	250	150	50	50	400	80	1960
Roselle	400	150	200	200	150	200	300			150		1750
Chilies	500	30	240	100	75	60	350		50	250		1655
Basil	300	116	45	210	120	100	390		12	120	90	1503
Cumin	600	61	80	57	107	150	140	73	10	49	77	1404
Caraway	620	92	63	75	68	120	93		32	42	179	1384
Fennel	400	80	12	111	84	150	118		57	28	55	1095
Black cumin	200	60	120	70	50	80	290	50	35	40	30	1025
Anise	400	83	18	92	84		118		57	28	55	935
Coriander	400	80	7	74	45		63			42	105	816

***Source*: Ministry of Agriculture, Undersecretary for horticulture, Dept. of aromatic and medicinal plants.**

Cost per ton of the major culinary herbs grown in Egypt.

LE/Ton

	Land Rent	Land Preparation	Seeds	Irrigation	Weed Control	Manure	Chemical Fertilizer	Pesticides	Labor	Harvest	Postharvest	Total Cost
Cumin	1200.00	122.00	160.00	114.00	214.00	300.00	280.00	146.00	20.00	16.33	154.00	2726.33
Roselle	666.67	250.00	333.33	333.33	250.00	333.33	500.00	0.00	0.00	50.00	0.00	2716.67
Black cumin	500.00	150.00	300.00	175.00	125.00	200.00	725.00	125.00	87.50	13.33	75.00	2475.83
Basil	454.55	175.76	68.18	318.18	181.82	151.52	590.91	0.00	18.18	40.00	136.36	2135.45
Mint	772.73	81.82	90.91	227.27	152.73	181.82	227.27	0.00	56.36	56.00	245.45	2092.36
Babouŋ	700.00	120.00	50.00	80.00	168.00	200.00	210.00	0.00	63.00	266.67	0.00	1857.67
Clandiola	700.00	120.00	120.00	80.00	168.00	200.00	290.00	0.00	62.00	100.00	0.00	1840.00
Anise	800.00	166.00	36.00	184.00	168.00	0.00	236.00	0.00	114.00	9.33	110.00	1823.33
Chilies	555.56	33.33	266.67	111.11	83.33	66.67	388.89	0.00	55.56	83.33	0.00	1644.44
Caraway	688.89	102.22	70.00	83.33	75.56	133.33	103.33	0.00	35.56	14.00	198.89	1505.11
Marjoram	472.22	64.44	27.78	233.33	66.67	55.56	216.67	0.00	34.44	20.00	22.22	1213.33
Henna	333.33	60.00	133.33	86.67	40.00	166.67	100.00	33.33	33.33	133.33	53.33	1173.33
Fennel	363.64	72.73	10.91	100.91	76.36	136.36	107.27	0.00	51.82	9.33	50.00	979.33
Coriander	291.97	58.39	5.11	54.01	32.85	0.00	45.99	0.00	0.00	14.00	76.64	578.96
Crane's bill	26.23	4.49	4.92	9.08	6.30	3.44	19.54	0.00	1.31	56.00	3.93	135.25

***Source*: Ministry of Agriculture, Undersecretary for horticulture, Dept. of aromatic and medicinal plants.**

Egypt: Culinary herbs export trend 1992-1999

Ton

	1992	1993	1994	1995	1996	1997	1998	1999
Coriander	8,168.96	3,452.59	3,239.95	4,782.39	5,680.48	5,235.74	4,288.00	6,562.00
Fennel	3,492.56	5,252.77	3,864.76	4,541.92	4,881.47	6,088.95	2,573.00	3,831.00
Basil	3,084.66	3,429.16	3,313.45	3,565.87	3,920.50	4,404.71	2,487.00	5,355.00
Marjoram	1,816.66	1,750.90	1,972.61	2,209.61	2,246.31	3,381.02	1,269.00	2,541.00
Caraway	1,311.47	739.29	253.94	1,395.37	3,080.01	3,614.62	1,499.00	2,417.00
Mint	674.62	650.73	1,231.51	965.50	1,084.22	1,206.46	897.00	1,608.00
Henna	429.40	448.60	312.83	349.41	545.56	636.51	179.00	499.00
Roselle	22.08	199.68	51.81	66.61	284.39	819.19	75.00	1,058.00
Chilies	72.06	152.14	231.04	233.72	358.92	666.68	94.00	315.00
Anise	153.48	216.03	200.44	395.33	168.67	342.40	25.00	206.00
Helba	21.14	166.59	72.58	65.08	217.81	862.39	42.00	139.00
Cumin	51.54	429.70	252.63	108.15	59.19	364.10	61.00	256.00
Black Cumin		10.23	2.53	18.92	62.19	57.49	16.00	108.00
Other	3.72	15.57	5.67	9.57	3.03	3.09	0.00	1.00

***Source*: Ministry of Agriculture, General authority. of agricultural quarantine.**

Egypt: culinary herbs monthly exports, 1999

Kilogram

Herb	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Coriander	421.03	290.359	258.547	219.085	176.34	720.975	1200.636	1439.598	541.6	479.569	294.888	308.063	6350.69
Basil	539.489	338.035	308.773	229.412	301.947	216.182	295.69	475.1232	413.4	311.699	672.664	1037.327	5139.7412
Fennel	326.958	260.606	184.708	129.01	78.8	618.084	415.786	474.527	362.574	341.73	412.394	656.464	4261.641
Marjoram		196.097	230.407	198.985	250.767	155.215	239.17	328.838	290.752	216.911	201.406	215.879	2524.427
Caraway	202.96	76	116.226	65.4	147.342	125.68	0.6	215.05	270.85	298.41	361.79	157.51	2037.818
Mint	21.506	599.159	102.062	72.372	91.218	109.432	141.428	88.805	117.181	130.725	103.747	171.869	1749.504
Roselle	52.257	9.846	81.848	12.08	82.049	75.644	38	101.293	49.741	24.1	8.495	97.31	632.663
Henna	66	38.855	69.38	21.5	67.55	56.66	18.6	28.155	48.705	59.758	65.54	30.695	571.398
Chilies		15.028	104.309	40.17		38.432	10.35	17.7	46	68.91	23	17.155	381.054
Cumin			13.1	2.075			53	56.5	57.23	39.5	6.05	50	277.455
Anise	7.7			2.41	0.818	4.875	16	38.95	24.8	8.01	32.705	5	141.268
Black Cumin	40.4	0.111	16	0.5	5		2.1		6.6	1.05	0.2		71.961

***Source*: Ministry of Agriculture, General authority. of agricultural quarantine.**